

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

OK

July 14, 2004

TO: Internal File

THRU: Peter H. Hess, Environmental Specialist III/Engineering, Team Lead *PHH by an*

FROM: Gregg A. Galecki, Environmental Specialist III/Hydrology *GA*

RE: Degasification Wells G-4, G-5, G-6, Canyon Fuel Company, LLC., Dugout Canyon Mine, C/007/039, Task #1943

SUMMARY:

The submittal, received on June 4, 2004, modifies the text of the Methane Degasification document incorporated into the existing Mining and Reclamation Plan (MRP) in August 2003. The modification consists of adding wells G-4, G-5, and G-6 to the existing Methane Degasification document. The submittal describes the location and development of three ventilation boreholes for the Rock Canyon seam to reduce methane within the coal seam in advance of the longwall mining operation.

Well site G-3 was developed in November 2003 and well site G-2 was developed in February 2004. Site G-1 will likely never be developed. It is anticipated well sites G-5 and G-6 will be developed soon after approval with well site G-4 likely never being developed.

De-gas drill holes G-4, G-5, and G-6 are in T 13 S, R 12 E, Section 24 and T 13 S, R 13 E, Section 18, as shown on Figure 1-1 and Plate 1-4. The three new wells will add an estimated total of 2.65 acres of disturbed area to the permit area (Table 1-2). Each well will disturb approximately 1 acre. The following technical memo addresses only geologic and hydrologic regulations germane to the current application. The information provided adequately addresses the minimum requirements of the regulations and incorporation into the currently approved MRP is recommended.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

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GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

Analysis:

No new geologic information is provided with the current submittal. For geologic information the reader is referenced back to Chapter 6 of the currently approved MRP.

Findings

The information provided adequately addresses the minimum requirements of the Environmental Resources – Geologic Resource Information section of the regulations.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:

Probable Hydrologic Consequences Determination

Within the currently approved Methane Degasification document the Operator has adequately identified any potential impacts to the hydrologic balance and has cited adequate mitigation for the potential impacts. No acid- or toxic- forming materials have been identified in the soils or strata at the Dugout Mine and none are anticipated. Any groundwater encountered during drilling will be sealed with drilling mud to eliminate migration down the hole and into the mine. No hydrocarbons will be stored on site, but should any leak or spill occur, the saturated absorbent materials would be disposed of at a landfill facility. Drilling of wells G-2 and G-3 did not encounter any acid- or toxic- forming materials and no measurable groundwater was encountered in either hole. Similar conditions are anticipated for the proposed wells.

Findings:

The information provided adequately addresses the minimum requirements of the Environmental Resources – Hydrologic Resource Information section of the regulations.

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Groundwater Monitoring

There are no active groundwater monitoring wells within two-miles of any of the proposed drill sites. Well GW-19-1 was only monitored in August and October 1997 and Well GW-24-1 has been blocked since 1998. It would be beneficial to establish groundwater wells in the area if any water existed. However, the drilling of G-2, G-3, and exploration holes currently being drilled (summer 2004), have not encountered any noticeable water. Spring SC-116 is located approximately 1 mile southeast of G-6 but is located in Flagstaff formation and no affects to the spring are anticipated. The establishment of a groundwater well after degasification production is not anticipated.

Surface Water Monitoring

The nearest surface-water monitoring site is DC-5 (Right Fork Dugout Creek), which is located approximately 1.5- and 2.0 miles downstream of G-5 and G-6, respectively. Both sites are approximately 1,500 feet upslope from the drainage. No encountering of groundwater is anticipated during drilling and any sheet flow from the site is adequately treated prior to leaving the drill site. The Right Fork of Dugout Creek is an intermittent drainage with flows ranging from 0 to 480 gpm being documented. A flow study conducted in 2002 (a drought year), peak flow on April 2, 2002, was documented at 25 gpm, with flow tapering off to zero by July 29, 2002. No adverse affects to the surface drainages are anticipated.

Acid- and Toxic-Forming Materials and Underground Development Waste

No acid- or toxic-forming materials have been encountered in the Dugout mine area or during previous drilling and none are anticipated.

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Discharges Into An Underground Mine

As cited in the currently approved Degasification amendment, if any water is encountered during drilling, the formation will attempt to be sealed using drilling mud. During completion of the well, a solid casing and grout will be used to ensure no water leaks into the mine. The wells are to be completed approximately 20-feet above the coal seam. No water was encountered during the drilling of G-2 or G-3 and no water problems are anticipated with the proposed wells.

Water-Quality Standards And Effluent Limitations

Section 751 of the Methane Degasification submittal indicates any potential overflow of the mud pit will be pumped into a tank and hauled from the site; indicating no discharges will occur at the site. Any sheet flow due to rainstorms will be treated with a silt fence prior to leaving the site.

Sediment Control Measures

The drill pads have been designed to minimize erosion and flow of sediment off the pads. A berm will be constructed around the perimeter of the disturbed area and will flow directly to silt fences. The drill pads will be constructed so that sheet-flow will be directed to areas of 'cut' material instead of 'fill' material to reduce potential erosion. During intermediate reclamation, sheet flow will be directed to silt fences discharging to areas of minimal (if any) intermediate reclamation. Water bars are proposed at both ends of the access road to site G-5. Additional water bars may be added during construction if necessary. Sites G-2 and G-3 have been functioning as designed since last year.

Casing and Sealing of Wells

In Section 542.700 of the Degasification Well document, the Operator commits to sealing wells in accordance with Federal and State regulations. At abandonment, the holes will be plugged at the bottom, and a lean concrete mixture will be poured into the casing until the concrete is within five (5) feet of the surface. The casing will be cut off at ground level and filled to the surface with concrete.

Findings:

The information provided adequately addresses the minimum requirements of the Operation Plan – Hydrologic Information section of the regulations.

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

Analysis:

Based on the anticipated affects of the proposed amendment, no modifications to either the Probable Hydrologic Consequence (PHC) or Cumulative Hydrologic Impact Assessment (CHIA) are necessary. Information provided adequately addresses how any potential affects caused by the drilling of the degasification wells can be reasonably mitigated without impact to the hydrologic regime.

Findings:

Information provided adequately addresses the minimum requirements of the Reclamation Plan - Cumulative Hydrologic Impact Assessment section of the regulations.

RECOMMENDATIONS:

The information provided adequately addresses the minimum requirements of the regulations and incorporation into the currently approved MRP is recommended.